

CLAIMS

1. A printing apparatus, comprising:

a movable head that performs recording on a medium using ink;

5 a first sensor that can move together with said head and that detects regular reflection light from said medium; and

a second sensor that is provided separately from said first sensor, that can move together with said recording head and that detects diffuse reflection light from said medium.

10 2. A printing apparatus, comprising:

a carry unit that carries a medium in a carrying direction;

a movable head that performs recording on a medium using ink;

15 a first sensor that can move together with said head and that detects an edge of said medium; and

a second sensor that can move together with said head and that detects a pattern formed on said medium by said head;

wherein said first sensor is provided further upstream with regard to said carrying direction than said second sensor.

20 3. A printing apparatus according to claim 1,

wherein said first sensor is provided further upstream with regard to a carrying direction in which said medium is carried than said second sensor.

25 4. A printing apparatus according to claim 1,

wherein said first sensor includes a light-emitting section and a light-receiving section;

30 said second sensor includes a light-emitting section and a light-receiving section; and

a direction in which said light-emitting section and said light-receiving section of said first sensor are arranged is different from a direction in which said light-emitting section and said light-receiving section of said second sensor are arranged.

5. A printing apparatus according to claim 4,

wherein said light-emitting section and said light-receiving section of said first sensor are arranged in a direction in which said medium is carried; and

5 said light-emitting section and said light-receiving section of said second sensor are arranged in a direction in which said head is moved.

6. A printing apparatus according to claim 1,

10 wherein said first sensor is a sensor for detecting an edge of said medium.

7. A printing apparatus according to claim 1,

wherein said second sensor is a sensor for detecting a pattern formed on said medium by said head.

15 8. A printing apparatus according to claim 2,

wherein said first sensor includes a light-emitting section and a light-receiving section;

20 said light-emitting section of said first sensor irradiates light onto said medium; and

said light-receiving section of said first sensor receives regular reflection light from said medium.

9. A printing apparatus according to claim 2,

25 wherein said second sensor includes a light-emitting section and a light-receiving section;

said light-emitting section of said second sensor irradiates light onto said medium; and

30 said light-receiving section of said second sensor receives diffuse reflection light from said medium.

10. A printing apparatus according to claim 6 or 2,

wherein said carry unit is controlled in accordance with the detection result of said first sensor.

11. A printing apparatus according to claim 6 or 2,
wherein said head is controlled in accordance with the detection
result of said first sensor.

12. A printing apparatus according to claim 6 or 2,
wherein said first sensor detects a lateral edge of said medium;
and
a region onto which ink is to be ejected from said head is determined
in accordance with the result of detecting said lateral edge.

13. A printing apparatus according to claim 6 or 2,
wherein said first sensor detects an upper edge of said medium;
and
said carry unit carries said medium to a print start position in
accordance with the result of detecting said upper edge.

14. A printing apparatus according to claim 6 or 2,
wherein said first sensor detects a lower edge of said medium; and
a region onto which ink is to be ejected from said head is determined
in accordance with the result of detecting said lower edge.

15. A printing apparatus according to claim 7 or 2,
wherein an ejection test of said head is performed in accordance
with the result of detecting said pattern with said second sensor.

16. A printing apparatus according to claim 15,
wherein a process of cleaning said head is performed in accordance
with the detection result of said second sensor.

17. A printing apparatus according to claim 1 or 2,
wherein said head can eject said ink while moving in a forward pass
and in a return pass; and
locations at which ink is to be ejected from said head are determined
in accordance with the detection result of said second sensor.

18. A printing apparatus according to claim 1 or 2,
wherein the type of said medium is detected from the detection
result of said first sensor and the detection result of said second sensor.

19. A printing apparatus according to claim 18,
wherein said head performs the recording on said medium in
accordance with the type of said medium.

20. A printing apparatus, comprising:

a movable head that performs recording on a medium using ink;
a first sensor that can move together with said head and that detects
regular reflection light from said medium; and

a second sensor that is provided separately from said first sensor,
that can move together with said recording head and that detects diffuse
reflection light from said medium:

wherein said first sensor is provided further upstream with regard
to a carrying direction in which said medium is carried than said second
sensor;

said first sensor includes a light-emitting section and a
light-receiving section;

said second sensor includes a light-emitting section and a
light-receiving section;

a direction in which said light-emitting section and said
light-receiving section of said first sensor are arranged is different
from a direction in which said light-emitting section and said
light-receiving section of said second sensor are arranged;

said light-emitting section and said light-receiving section of
said first sensor are arranged in the direction in which said medium is
carried;

said light-emitting section and said light-receiving section of
said second sensor are arranged in a direction in which said head is moved;

said first sensor is a sensor for detecting an edge of said medium;

said carry unit is controlled in accordance with the detection
result of said first sensor;

said head is controlled in accordance with the detection result

of said first sensor;

said first sensor detects a lateral edge of said medium, and a region onto which ink is to be ejected from said head is determined in accordance with the result of detecting said lateral edge;

5 said first sensor detects an upper edge of said medium, and said carry unit carries said medium to a print start position in accordance with the result of detecting said upper edge;

10 said first sensor detects a lower edge of said medium, and a region onto which ink is to be ejected from said head is determined in accordance with the result of detecting said lower edge;

said second sensor detects a pattern formed on said medium by said head;

an ejection test of said head is performed in accordance with the result of detecting said pattern with said second sensor;

15 a process of cleaning said head is performed in accordance with the detection result of said second sensor;

said head can eject said ink while moving in a forward pass and in a return pass;

20 locations at which ink is to be ejected from said head are determined in accordance with the detection result of said second sensor;

the type of said medium is detected from the detection result of said first sensor and the detection result of said second sensor; and

said head performs the recording on said medium in accordance with the type of said medium.

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21. A printing apparatus, comprising:

a carry unit that carries a medium in a carrying direction;

a movable head that performs recording on a medium using ink;

30 a first sensor that can move together with said head and that detects an edge of said medium; and

a second sensor that can move together with said head and that detects a pattern formed on said medium by said head;

wherein said first sensor is provided further upstream with regard to said carrying direction than said second sensor;

35 said carry unit is controlled in accordance with the detection

result of said first sensor;

said head is controlled in accordance with the detection result of said first sensor;

5 said first sensor detects a lateral edge of said medium, and a region onto which ink is to be ejected from said head is determined in accordance with the result of detecting said lateral edge;

said first sensor detects an upper edge of said medium, and said carry unit carries said medium to a print start position in accordance with the result of detecting said upper edge;

10 said first sensor detects a lower edge of said medium, and a region onto which ink is to be ejected from said head is determined in accordance with the result of detecting said lower edge;

an ejection test of said head is performed in accordance with the result of detecting said pattern with said second sensor;

15 a process of cleaning said head is performed in accordance with the detection result of said second sensor;

said head can eject said ink while moving in a forward pass and in a return pass;

20 locations at which ink is to be ejected from said head are determined in accordance with the detection result of said second sensor;

the type of said medium is detected from the detection result of said first sensor and the detection result of said second sensor;

said head performs the recording on said medium in accordance with the type of said medium;

25 said first sensor includes a light-emitting section and a light-receiving section;

said light-emitting section of said first sensor irradiates light onto said medium;

30 said light-receiving section of said first sensor receives regular reflection light from said medium;

said second sensor includes a light-emitting section and a light-receiving section;

said light-emitting section of said second sensor irradiates light onto said medium; and

35 said light-receiving section of said second sensor receives

diffuse reflection light from said medium.

22. A printing system comprising:

a computer; and

a printing apparatus, said printing apparatus including:

a movable head that performs recording on a medium using ink;

a first sensor that can move together with said head and that detects regular reflection light from said medium; and

a second sensor that is provided separately from said first sensor, that can move together with said recording head and that detects diffuse reflection light from said medium.

23. A printing system comprising:

a computer; and

a printing apparatus, said printing apparatus including:

a carry unit that carries a medium in a carrying direction;

a movable head that performs recording on a medium using ink;

a first sensor that can move together with said head and that detects an edge of said medium; and

a second sensor that can move together with said head and that detects a pattern formed on said medium by said head;

wherein said first sensor is provided further upstream with regard to said carrying direction than said second sensor.